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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,007	11/13/2003	Hideki Ohmae	2003-1658	6532

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EXAMINER	
NEGRON, ISMAEL	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/706,007	OHMAE ET AL.	
	Examiner	Art Unit	
	Ismael Negron	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,10,11 and 13* is/are rejected.

7)☒ Claim(s) *3,8,9 and 12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on February 18, 2005 has been entered. Claims 1-12 have been amended. No claim has been cancelled. Claim 13 has been added. Claims 1-13 are still pending in this application, with Claim 1 being independent.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 4-7, 10, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over HUANG et al. (U.S. Pat. 5,467,146) and TOMITA (U.S. Pat. 5,379,083).

HUANG et al. discloses an illumination device having:

- **a light source (as recited in Claim 1)**, Figure 2, reference number 16;
- **the light source being a white light source (as recited in Claim 1)**, column 3, lines 45;

- **condensing means (as recited in Claim 1)**, Figure 2, reference number 23;
- **the condensing means being for condensing light emitted from the light source (as recited in Claim 1)**, as seen in Figure 2;
- **color selection means (as recited in Claim 1)**, Figure 2, reference number 24;
- **the color selection means being for selectively passing through light of each color band of the light which has been condensed by the condensing means (as recited in Claim 1)**, column 3, lines 35-41;
- **the color selection means passing colored light in a predetermined order (as recited in Claim 1)**, column 3, lines 35-41;
- **the color selection means having a rotating a color wheel (as recited in Claim 1)**, column 3, line 35-44;
- **the color wheel including a plurality of color filters (as recited in Claim 1)**, column 3, lines 35-41;
- **the color filters being placed in the form of disc (as recited in Claim 1)**, column 3, lines 35-41;
- **the color filters having respective colors (as recited in Claim 1)**, column 3, lines 35-41;

- **illumination means (as recited in Claim 1)**, Figure 2, reference number 25;
- **the illumination means being for condensing the light which has passed through the color selection means (as recited in Claim 1)**, as seen in Figure 2;
- **a spatial light modulator (as recited in Claim 1)**, Figure 2, reference number 15;
- **the spatial light modulator (SLM) being for modulating the light incident from the illumination means (as recited in Claim 1)**, column 3, lines 21-34;
- **projection means (as recited in Claim 1)**, Figure 2, reference number 29;
- **the projection means being for projecting the light modulated by the spatial light modulator onto a screen (as recited in Claim 1)**, column 4, lines 19-22;
- **shading means (as recited in Claim 1)**, Figure 2, reference number 26;
- **the shading means being for shading part of the light (as recited in Claim 1)**, column 4, lines 58-64;
- **light elimination means (as recited in Claim 4)**, Figure 2, reference number 21;

- **the elimination means being for partially eliminating light of a specific wavelength band (as recited in Claim 4)**, column 3, lines 49-51;
- **the shading means being placed on an emission side of the color selection means (as recited in Claim 5)**, as seen in Figure 2;
- **the light source being a xenon lamp**, column 3, lines 47 and 48;
- **a plane that is orthogonal to an optical axis of the shading means (as recited in Claim 10)**, inherent;
- **the plane being approximately circular in cross section (as recite in Claim 10)**, inherent; and
- **the shading means is approximately columnar (as recited in Claim 11)**, as seen in Figure 2.

HUANG et al. discloses all the limitations of the claims, except:

- the shading means shading a part of light corresponding to an area in excess of the desired image (as recited in Claim 1);
- the shading means being a diaphragm (as recited in Claim 2);
- the diaphragm having an opening of a predetermined size (as recited in Claim 2);
- a width of the opening of the diaphragm being set to be equivalent to or smaller than a diameter of a desired image (as recited in Claim 2);

- the shading means is placed at a 5 mm or smaller air gap apart from the color selection means (as recited in Claim 6);
- the light source is an extra-high pressure mercury lamp (as recited in Claim 7); and
- the plurality of color filters being fan-shaped (as recited in Claim 13).

TOMITA discloses an illumination device having :

- **a light source (as recited in Claim 1)**, Figure 1a, reference number 11;
- **condensing means (as recited in Claim 1)**, Figure 1a, reference number 12;
- **the condensing means being for condensing light emitted from the light source (as recited in Claim 1)**, as seen in Figure 1a;
- **illumination means (as recited in Claim 1)**, Figure 1a, reference number 25;
- the illumination means being for condensing the light which has passed through the color selection means (as recited in Claim 1), as seen in Figure 2;
- **a spatial light modulator (as recited in Claim 1)**, Figure 1a, reference number 14;

- **the spatial light modulator (SLM) being for modulating the light incident from the illumination means (as recited in Claim 1)**, as seen in Figure 1a;
- **projection means (as recited in Claim 1)**, Figure 1a, reference number 17;
- **the projection means being for projecting the light modulated by the spatial light modulator onto a screen (as recited in Claim 1)**, as seen in Figure 1a;
- **shading means (as recited in Claim 1)**, Figure 1a, reference number 16;
- **the shading means being placed upstream from the SPL**, as seen in Figure 2;
- the shading means shading a part of light corresponding to an area in excess of the desired image (as recited in Claim 1);
- **the shading means being a diaphragm (as recited in Claim 2)**, as evidenced by Figure 2;
- **the diaphragm having an opening of a predetermined size (as recited in Claim 2)**, inherent; and
- **a width of the opening of the diaphragm being set to be equivalent to or smaller than a diameter of a desired image (as recited in Claim 2)**, inherent.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include the adjustable aperture shading means of TOMITA in the illumination device of HUANG et al., to adjust the size and brightness of the projected image, as per the teachings of TOMITA.

Regarding the shading means being placed at a 5 mm or smaller air gap apart from the color selection means (as recited in Claim 6), it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to position the shading means of TOMITA at the claimed distance from the color selection means of HUANG et al., since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Regarding the light source being an extra-high pressure mercury lamp, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the claimed mercury lamp instead of the xenon lamp of HUANG et al. since the Examiner takes Official Notice of the equivalence of extra-high pressure mercury lamps and xenon lamps for their use in the illumination art, specifically for projection display devices. In addition, applicant's statement asserting the equivalency of xenon lamps, a metal halide lamps, and an extra-high pressure mercury lamps for the particular application feature by the claimed invention (see specification as filed paragraphs 0010, 0168 and 0285).

Regarding the plurality of color filters being fan-shaped (as recited in Claim 13), it would have been obvious to one of ordinary skill in the art at the time the claimed

invention was made to use a plurality of fan-shaped color filters since it has been held by the courts that a change in shape or configuration, without any criticality, is nothing more than one of numerous shapes that one of ordinary skill in the art will find obvious to provide based on the suitability for the intended final application. See *In re Dailey*, 149 USPQ 47 (CCPA 1976). It appears that the disclosed device would perform equally well shaped as disclosed by HUANG et al. and TOMITA. In addition, one of ordinary skill in the art at the time the claimed invention would have recognized that the plurality of color filters of the color wheel of HUANG et al. are necessarily fan-shape as they are radial sections of a circle.

Allowable Subject Matter

3. Claims 3, 8, 9 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches a projection display device including a white light source, first light condensing means, color selection means, second light condensing means, a spatial light modulator (SLM) and projecting means. The first condensing means include an ellipsoidal mirror for directing light from the light source toward the color selection means. The second condensing means direct light passed by the color

selection means to illuminate the SLM. Light from the SLM is projected by the projecting means onto a screen. The device also includes light shading means having a light shading part which varies in size according to the wavelength of the light passed by the color selection means; or light shading means being approximately conical.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically an ellipsoidal mirror in combination with the claimed projection display device, or such device having approximately conical light shading means, or a light shading part which varies in size according to the wavelength of the light passed by the color selection means.

Response to Arguments

5. Applicant's arguments filed February 18, 2005 have been fully considered but they are not persuasive.

6. Regarding the Examiner's rejection of Claim 1 under 35 U.S.C. 103(a) as being unpatentable over HUANG et al. (U.S. Pat. 5,467,146) and TOMITA (U.S. Pat. 5,379,083), the applicant argues that the cited reference fails to disclose all the features of the claimed invention, specifically shading means for, when a size of the condensed spot on the color wheel has increased due to an increased in light emission of the white light source, shading a portion of the light passing through the color wheel corresponding to the increase size of the condensed spot.

7. In response to applicant's argument that HUANG et al. and TOMITA fail to disclose individually, or even suggest in combination, shading means use for the purpose of shading a portion of the light passing through the color wheel corresponding to the increase size of the condensed spot, such increase in size of the condensed spot being due to an increased in light emission of the white light source, the applicant is advised that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

In this case, TOMITA discloses in Figure 1a illumination means including condensing means 12 for condensing light from a light source 11, and shading means 16 for adjusting the illumination aperture of the illuminating means.

The shading means of TOMITA where considered capable of being used for the purpose of shading a portion of the light passing through the color wheel corresponding to the increase size of the condensed spot, such increase in size of the condensed spot being due to an increased in light emission of the white light source, as claimed.

It would have been obvious to one of ordinary skill in the art to use the shading means of TOMITA instead of that of the illumination device of HUANG et al., to adjust the size and brightness of the projected image, as per the teachings of TOMITA (as stated in Section 2 of the instant Office Action).

8. With respect to claims 2-13 the applicant presents no arguments, except stating that such claims are dependent upon Claim 1 and would be allowable if the independent claim is allowed.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

10. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached at (571) 272-2378. The facsimile machine number for the Art Group is (703) 872-9306.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications maybe obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to http://pair-direct.uspto.gov. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.

lnr

March 28, 2005

JOHN ANTHONY WARD
PRIMARY EXAMINER